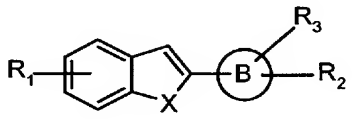
Amendments to Claims

The listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended): A method of treating or inhibiting a disorders associated with the activation of large conductance calcium activated potassium channels, wherein the disorder is selected from the group consisting of: urinary incontinence, overactive bladder, pollakiuria, urge incontinence, diseases associated with detrusor instability, irritable bladder, cystitis, urethritis, and kidney stone ailments, which comprises administering to a subject in need thereof an effective amount of a compound according to formula (I):



(I)

wherein:

R_1 is absent or represents up to three substituents independently selected from (C_{1-6})alkyl, (C_{2-6})alkenyl, (C_{3-6})cycloalkyl, aryl, (C_{1-6})alkyl-aryl, ~~heterocycle, (C_{1-6})alkyl-heterocycle,~~ OR_a , SR_a , hydroxy, halogen, nitro, trifluoromethyl, cyano, COR_a, CO_2R_a, SO_3H, (C_{1-6})alkyl-CO_2-(C_{1-6})alkyl, $CONR_aR_b$, and NR_aR_b;

where each said (C_{1-6})alkyl, (C_{2-6})alkenyl, and (C_{3-6})cycloalkyl group is unsubstituted or substituted with 1 to 5 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';

where each said aryl group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R'; ~~and~~

~~where each said heterocycle group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $N(R')_2$, $CH_2N(R')_2$, nitro, cyano, CO_2R', $CON(R')_2$, -COR', and -NR'C(O)R';~~

each R' is independently H or unsubstituted (C_{1-6})alkyl;

X is NR_a~~, O, or S~~;

B is ~~aryl or heterocycle~~ phenyl;

R_2 is absent or represents up to three substituents independently selected from (C_{1-6})alkyl, (C_{2-6})alkenyl, (C_{3-6})cycloalkyl, aryl, (C_{1-6})alkyl-aryl, ~~heterocycle, (C_{1-6})alkyl-heterocycle,~~ OR_a, SR_a, hydroxy, halogen, nitro, cyano, COR_a, CO_2R_a, SO_3H, (C_{1-6})alkyl-CO_2-(C_{1-6})alkyl, $CONR_aR_b$, and NR_aR_b;

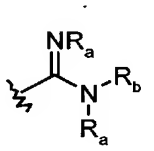
where each said (C_{1-6})alkyl, (C_{2-6})alkenyl, and (C_{3-6})cycloalkyl group is unsubstituted or substituted with 1 to 5 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';

where each said aryl group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R'; ~~and~~

~~where each said heterocycle group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl,~~

~~(C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';~~

R_3 is COOH, $CONR_aR_b$, SO_3H, $SO_2NR_aR_b$, $CONR_aSO_2R_b$,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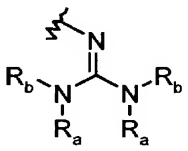
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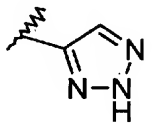
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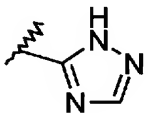
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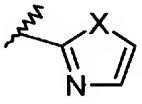
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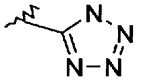

; and

each R_a and R_b is independently selected from hydrogen, (C_{1-6})alkyl, aryl, and ~~heterocycle,~~ (C_{1-6})alkyl-aryl~~, and (C_{1-6})alkyl-heterocycle~~;

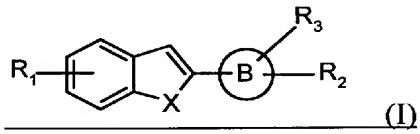
where each said (C_{1-6})alkyl group is unsubstituted or substituted with 1 to 5 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';

where each said aryl group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R'; and

~~where each said heterocycle group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';~~

or a pharmaceutically acceptable salt thereof.

2. (Currently Amended): A method ~~according to claim 1~~ of relaxing bladder smooth muscle tissue through the activation of large conductance calcium activated potassium channels, which comprises administering to a subject in need thereof an effective amount of a compound according to formula (I):



(I)

wherein:

R_1 is absent or represents up to three substituents independently selected from (C_{1-6})alkyl, (C_{2-6})alkenyl, (C_{3-6})cycloalkyl, aryl, (C_{1-6})alkyl-aryl, OR_a, SR_a, hydroxy, halogen, nitro, trifluoromethyl, cyano, COR_a, CO_2R_a, SO_3H, (C_{1-6})alkyl-CO_2-(C_{1-6})alkyl, $CONR_aR_b$, and NR_aR_b;

where each said (C_{1-6})alkyl, (C_{2-6})alkenyl, and (C_{3-6})cycloalkyl group is unsubstituted or substituted with 1 to 5 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';

where each said aryl group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';

each R' is independently H or unsubstituted (C_{1-6})alkyl;

X is NR_a;

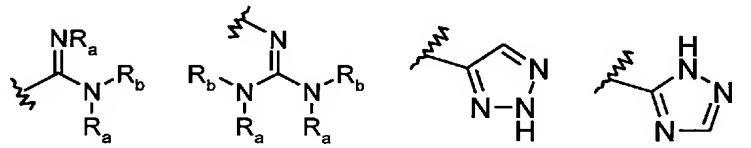
B is phenyl;

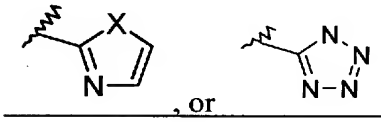
R_2 is absent or represents up to three substituents independently selected from (C_{1-6})alkyl, (C_{2-6})alkenyl, (C_{3-6})cycloalkyl, aryl, (C_{1-6})alkyl-aryl, OR_a, SR_a, hydroxy, halogen, nitro, cyano, COR_a, CO_2R_a, SO_3H, (C_{1-6})alkyl-CO_2-(C_{1-6})alkyl, $CONR_aR_b$, and NR_aR_b;

where each said (C_{1-6})alkyl, (C_{2-6})alkenyl, and (C_{3-6})cycloalkyl group is unsubstituted or substituted with 1 to 5 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';

where each said aryl group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';

R_3 is COOH, $CONR_aR_b$, SO_3H, $SO_2NR_aR_b$, $CONR_aSO_2R_b$,





; and

each R_a and R_b is independently selected from hydrogen, (C_{1-6})alkyl, aryl, and (C_{1-6})alkyl-aryl;

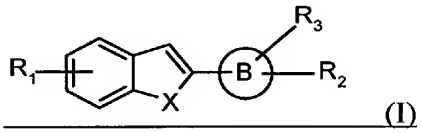
where each said (C_{1-6})alkyl group is unsubstituted or substituted with 1 to 5 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';

where each said aryl group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, -N(R')$_2$, -CH_2N(R')$_2$, nitro, cyano, -CO_2R', -CON(R')$_2$, -COR', and -NR'C(O)R';

or a pharmaceutically acceptable salt thereof.

3. (Cancelled)

4. (Currently Amended): A pharmaceutical composition which comprises a compound according to ~~claim 1~~ formula (I):



(I)

wherein:

R_1 is absent or represents up to three substituents independently selected from (C_{1-6})alkyl, (C_{2-6})alkenyl, (C_{3-6})cycloalkyl, aryl, (C_{1-6})alkyl-aryl, OR_a, SR_a, hydroxy, halogen, nitro, trifluoromethyl, cyano, COR_a, CO_2R_a, SO_3H, (C_{1-6})alkyl-CO_2-(C_{1-6})alkyl, $CONR_aR_b$, and NR_aR_b;

where each said (C_{1-6})alkyl, (C_{2-6})alkenyl, and (C_{3-6})cycloalkyl group is unsubstituted or substituted with 1 to 5 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, -N(R')$_2$, -CH_2N(R')$_2$, nitro, cyano, -CO_2R', -CON(R')$_2$, -COR', and -NR'C(O)R';

where each said aryl group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, -N(R')$_2$, -CH_2N(R')$_2$, nitro, cyano, -CO_2R', -CON(R')$_2$, -COR', and -NR'C(O)R';

each R' is independently H or unsubstituted (C_{1-6})alkyl;

X is NR_a;

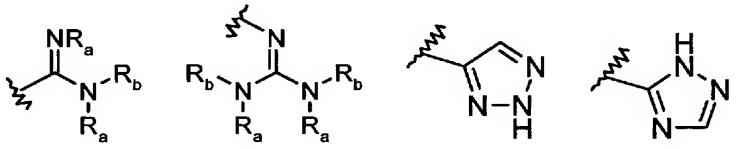
B is phenyl;

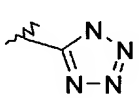
R_2 is absent or represents up to three substituents independently selected from (C_{1-6})alkyl, (C_{2-6})alkenyl, (C_{3-6})cycloalkyl, aryl, (C_{1-6})alkyl-aryl, OR_a, SR_a, hydroxy, halogen, nitro, cyano, COR_a, CO_2R_a, SO_3H, (C_{1-6})alkyl-CO_2-(C_{1-6})alkyl, $CONR_aR_b$, and NR_aR_b;

where each said (C_{1-6})alkyl, (C_{2-6})alkenyl, and (C_{3-6})cycloalkyl group is unsubstituted or substituted with 1 to 5 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';

where each said aryl group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, $-N(R')_2$, $-CH_2N(R')_2$, nitro, cyano, $-CO_2R'$, $-CON(R')_2$, -COR', and -NR'C(O)R';

R_3 is COOH, $CONR_aR_b$, SO_3H, $SO_2NR_aR_b$, $CONR_aSO_2R_b$,



, or  ; and

each R_a and R_b is independently selected from hydrogen, (C_{1-6})alkyl, aryl, and (C_{1-6})alkyl-aryl;

where each said (C_{1-6})alkyl group is unsubstituted or substituted with 1 to 5 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, -N(R')$_2$, -CH_2N(R')$_2$, nitro, cyano, -CO_2R', -CON(R')$_2$, -COR', and -NR'C(O)R';

where each said aryl group is unsubstituted or substituted with 1 to 3 substituents selected from the group consisting of: halo, -OR', -SR', (C_{1-6})alkylsulfonyl, (C_{1-6})alkylsulfoxyl, -N(R')$_2$, -CH_2N(R')$_2$, nitro, cyano, -CO_2R', -CON(R')$_2$, -COR', and -NR'C(O)R';

or a pharmaceutically acceptable salt thereof and pharmaceutically acceptable carrier.

5-8. (Withdrawn)

9. (New): The method according to claim 1 wherein the disorder is urinary incontinence.

10. (New): The method according to claim 1 wherein the disorder is an overactive bladder.

11. (New): The method according to claim 1 wherein the disorder is pollakiuria.

12. (New): The method according to claim 1 wherein the disorder is urge incontinence.

13. (New): The method according to claim 1 wherein the disorder is irritable bladder.

14. (New): The method according to claim 1 wherein the disorder is cystitis.

15. (New): The method according to claim 1 wherein the disorder is urethritis.